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Part 1. Three New Cestodes from
Wild Birds and Rabbit

With 15 Text-figures

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ABSTRACT Two new species of davaineid cestodes from wild birds and a new species of anoplocephalid cestode from wild rabbit are described.

On July 4, 1970, a specimen of the common snipe, *Numenius phaeopus variegatus*, was collected by G. Kugi at Sone, Kitakyūshū City, Fukuoka Prefecture, and examined for the presence of parasites. The tapeworms obtained from this bird were, although well extended, difficult to stain because of long preservation, but from several series of whole mounts the important morphological features could be determined. The tapeworm represents a new species of the genus *Raillietina* and subgenus *Skrjabinia* for which the name *Raillietina (Skrjabinia) polyhamata* is proposed.

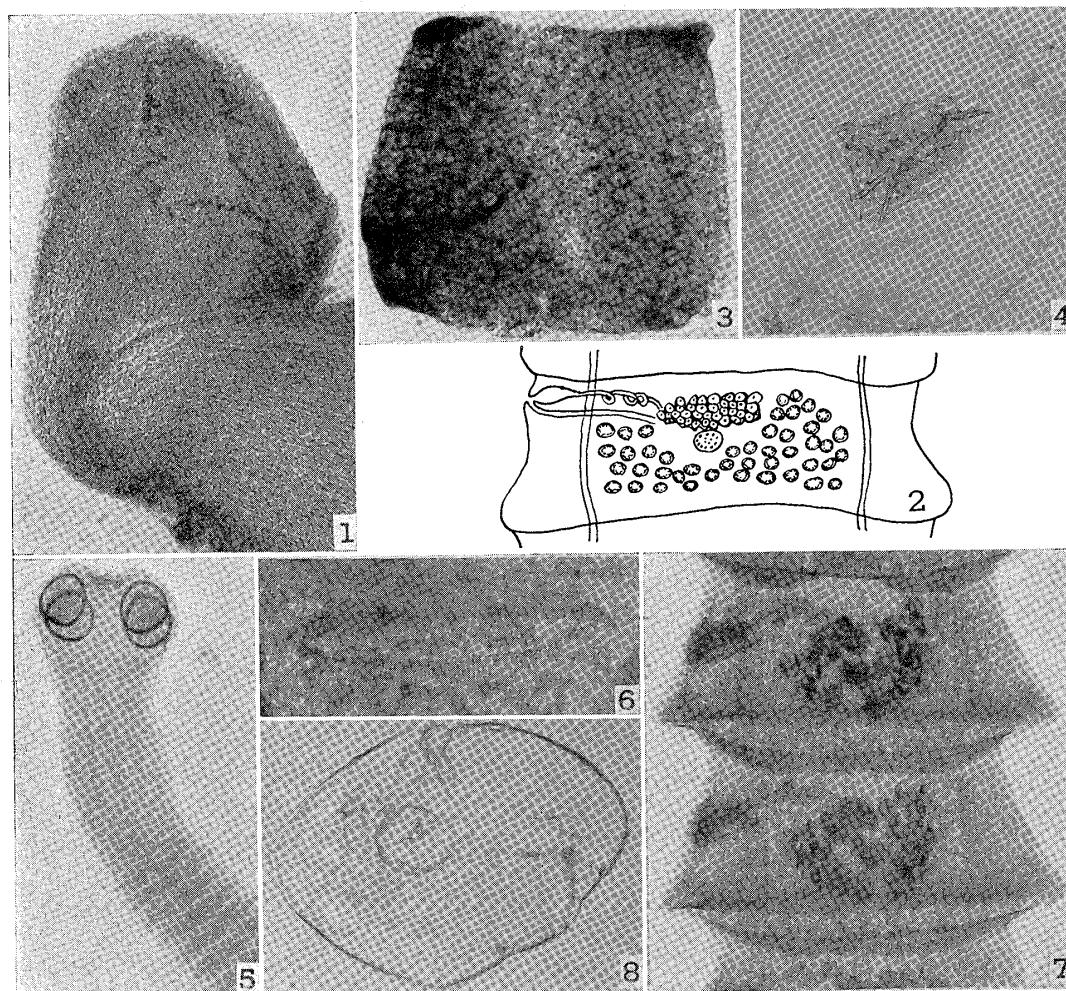
***Raillietina (Skrjabinia) polyhamata* n. sp.**

Diagnosis (all measurements in millimeters). Fully developed strobila measuring 50 to 60 in length with maximum width 3.5 to 4.1. Scolex 0.350 to 0.385 long and 0.245 to 0.280 wide. Rostellum 0.175 to 0.210 in diameter, armed with about 1000 to 1200 hooks of typical davaineid shape, 0.007 long, arranged in two rows. Round suckers 0.098 to 0.152 in diameter, unarmed. Neck absent. Immature and mature segments greater in width than in length. Senile segments longer than broad when shed. Genital pores irregularly alternate; situated in anterior third of segments.

Male genitalia:— Testes 50 to 65 in each segment, round in shape, with an average diameter of 0.028 to 0.035; presenting mainly on sides and posterior to

ovary. Sperm duct arising at center of segment, extending laterally with many convolutions, to base of cirrus pouch. Cirrus pouch small, measuring 0.105 to 0.112 long and 0.070 to 0.088 wide; cirrus armed.

Female genitalia:— Ovary extremely lobed in moderately extended segments, measuring 0.105 to 0.138 by 0.084 to 0.105. Vitelline gland irregularly reniform and located behind ovary. Unconvoluted vagina parallel to and closely posterior to sperm duct, extending genital pore. In senile segment almost all trace of male genitalia lost. Uterus develops at first in front of ovary, gradually increasing in size, and finally occupying most of segment and frequently extending laterally beyond excretory vessels. In senile segments it becomes divided into capsules, each containing a single egg, 0.112 to 0.125 in diameter. Onchosphere spherical, measuring 0.039 to 0.046 in diameter; embryonal hook 0.021 to 0.025 long.



Figs. 1-4. *Raillietina (Skrjabinia) polyhamata* n. sp. — 1. Scolex ($\times 140$). — 2. Outline tracing of mature segment. — 3. Senile segment ($\times 20$). — 4. Onchosphere ($\times 300$).

Figs. 5-8. *Raillietina (Paroniella) dendrocopina* n. sp. — 5. Scolex ($\times 30$). — 6. Rostellar hooks ($\times 400$). — 7. Mature segments ($\times 30$). — 8. Onchosphere ($\times 450$).

Discussion. The present species distinctly differs from any of the known species of *Raillietina* (*Skrjabinia*) in the larger number of rostellar hooks. Accordingly, it should be regarded as a new species.

Host. *Numenius phaeopus variegatus*.

Habitat. Small intestine.

Locality. Sone, Kitakyûshû City, Fukuoka Prefecture; July 4, 1970.

Type depository. Biological Laboratory, Nara University of Education, Nara, Japan.

A specimen of the small woodpecker, *Dendrocopos kizuki*, was collected by G. Kugi at Beppu City, Ôita Prefecture, on May 4, 1973. At post-mortem examination, it was found that the bird was infected with six tapeworms to be described below.

Raillietina (*Paroniella*) *dendrocopina* n. sp.

Diagnosis (all measurements in millimeters). Worm length, 75 to 80; maximum width, 1.3 to 1.4. Scolex 0.346 to 0.373 long and 0.373 to 0.415 wide, with retractile rostellum 0.077 wide and 0.088 long, armed with a crown of about 200 to 250 hooks, 0.007 long, arranged in two rows. Sucker round, 0.124 by 0.138, armed with 6 to 8 rows of hooks, 0.005 to 0.007 long. Neck 0.346 long and 0.235 wide. Immature and mature segments greater in width than in length. Genital pores unilateral, located slightly posterior to middle of segment margin.

Male genitalia:— Testes 16 to 20 in number, lying in median field of each segment and surrounding female organ. Vas deferens situated in anterior one-third of segment, arising near median line and extending laterally, forming many convolutions towards base of cirrus pouch into which it enters. Cirrus pouch pyriform, 0.101 long and 0.039 wide. Cirrus unarmed.

Female genitalia:— Ovary lobed, 0.063 to 0.074 long and 0.088 to 0.105 wide, lying in middle of each segment. Vitelline gland, irregularly reniform, 0.063 to 0.070 by 0.063 to 0.077, lying behind ovary. Senile segments are occupied by a number of egg capsules into which uterus breaks up, each of them containing only one egg. Egg oval, 0.046 to 0.095 by 0.035 to 0.056 and surrounded by thin transparent membranes. Onchosphere spherical, 0.018 to 0.021 by 0.014 to 0.018; embryonal hooks 0.007 in length.

Discussion. The present species resembles *Raillietina* (*Paroniella*) *parbata* Sharma, 1943, and *R. (P.) rangoonica* Subramanian, 1928, from *Gallus gallus domesticus*. There is no morphological description about ovaries, eggs, onchospheres and embryonal hooks of these two species, so that it is impossible to compare the present species with them in detail. However, the present species distinctly differs from *R. (P.) parbata* in the total length of the worm, the width of the scolex, the size of the sucker and the row of the acetabular hooks, and from *R. (P.) rangoonica* in the row of the acetabular hooks, the diameter of the rostellum and the length of the

rostellar hooks.

Host. *Dendrocopos kizuki*.

Habitat. Small intestine.

Locality and date. Beppu City, Ōita Prefecture; May 4, 1973.

Type depository. Biological Laboratory, Nara University of Education, Nara, Japan.

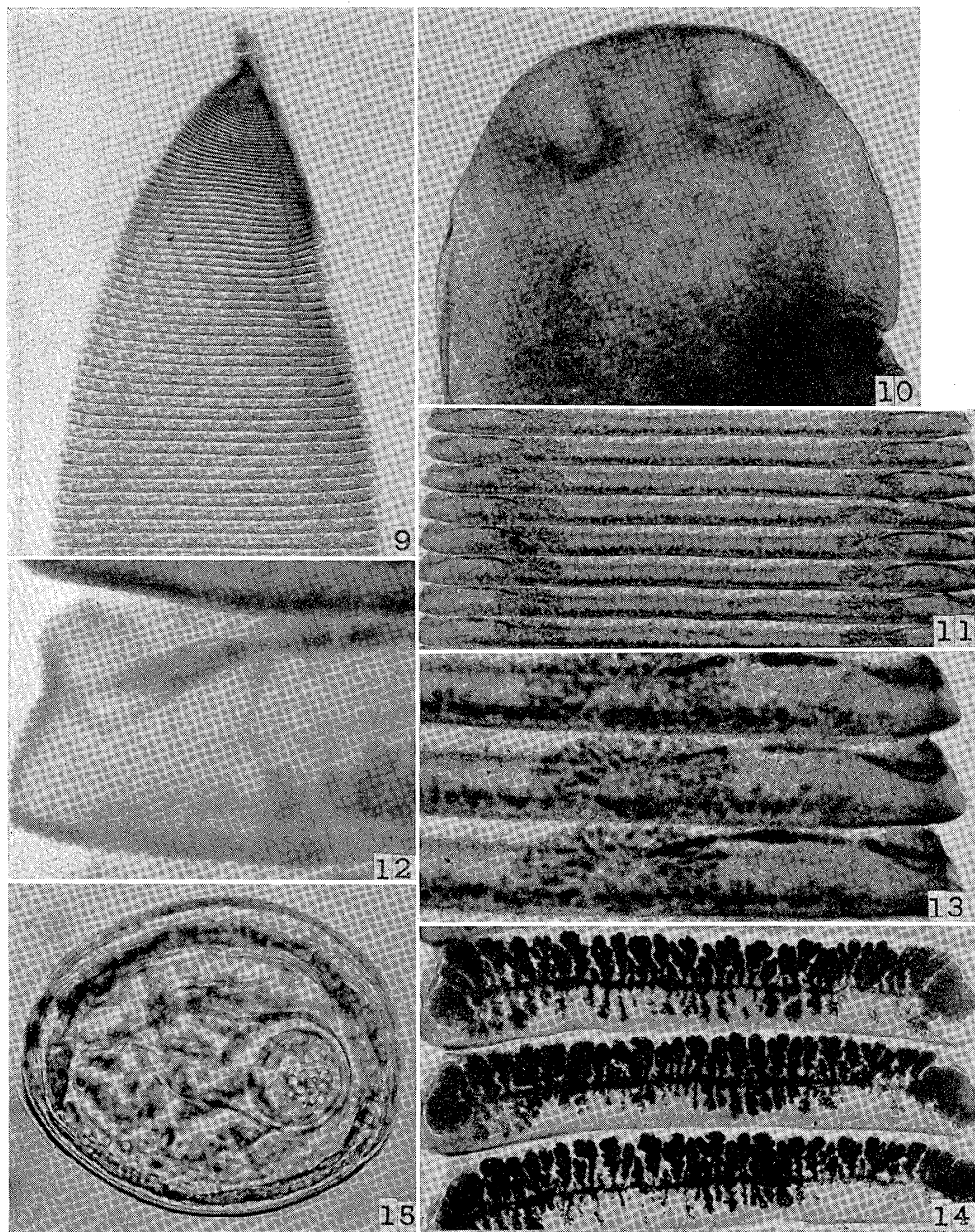
The material described below was obtained from the common hare, *Lepus brachyurus*, in the neighbourhood of Beppu City, Ōita Prefecture, on November 22, 1972. The cestodes, on removal from the intestine, were washed in running tap water for an hour, and then fixed between the two glass slides. The fixatives used for whole mounts were 5 percent formalin. The flat strobilas were placed in 4 percent ferric ammonium sulfate for 30 to 50 minutes and then were stained with Heidenhain's hematoxylin for 30 minutes and mounted in canada balsum.

Mesgovoyia oitana n. sp.

The length of the mature specimen reaches about 250 mm, the maximum width 10 to 15 mm. The scolex, when compared with the strobila, is very small, 0.55 to 0.69 mm long and 0.50 mm wide, somewhat flattened anteriorly. There are four well-developed unarmed suckers arranged in a dorsal and a ventral pair. They are slightly elliptical, measuring 0.11 to 0.12 mm in diameter. The neck is very short, measuring 0.21 to 0.27 mm long. Each segment with double genitalia; genital pore opening in slightly anterior to middle of each lateral margin.

The male genital primordia appear between the 83rd–87th segment from the end of the neck region. The testes, in mature segments, range from 80 to 100 in number. They lie along the posterior border of the segment and extend in an uninterrupted chain between the longitudinal excretory canals, measuring 0.083 to 0.097 mm in diameter. The testes disappear in the senile segments which have become detached. The seminal vesicle is much convoluted and median to the longitudinal excretory canal. The cirrus pouch is thick-walled and muscular, containing a well developed cirrus. The cirrus pouch is 0.48 to 0.55 mm in length and 0.07 to 0.08 mm in width.

The female genital primordia appear by the 78th–82nd segment. The ovary, measured in mature segment, ranges from 1.11 to 1.25 mm in width. It consists of a number of ovarian follicles, which extend in all directions, embracing the vitelline gland posteriorly. The ovarian follicles are club-shaped, 0.29 to 0.42 mm in length. The vitelline gland is a compact bean-shaped organ and is bounded on either side by the ovarian follicles. It has transverse diameter of 0.42 to 0.50 mm. The opening of the vagina is immediately below that of the cirrus pouch. The uterus, in young stages, is a narrow tube running across the segment slightly dorsal to the median plane and extends laterally almost to the level of the lateral excretory canals. The uterus



Figs. 9-15. *Mosgovoyia oitana* n. sp. — 9. Anterior region of strobila ($\times 4$). — 10. Scolex ($\times 110$). — 11. Mature segments ($\times 70$). — 12. Cirrus pouch and vagina ($\times 40$). — 13. Genital organ system ($\times 20$). — 14. Senile segments (70). — 15. Onchosphere ($\times 550$).

increases in gravid segment and becomes lobed, sacciform pouches being given off anteriorly and posteriorly. The egg is hexahedral in shape, with a diameter of 0.77 to 0.084 mm. It possesses the same pyriform apparatus as is found in Anoplocephalidae generally. The onchosphere is spherical, measuring 0.018 to 0.021 mm

in diameter and embryonal hook is 0.008 to 0.011 mm long.

Discussion. The present species closely resembles *Mosgovoyia pectinata* from *Oryctolagus cuniculus*, *Lepus europaeus*, *L. timidus*, *L. variabilis* and *Marmota marmota*. It, however, differs from *M. pectinata* in the size of scolex, which measures 0.55 to 0.69 mm long and 0.49 to 0.52 mm wide as contrasted with 0.2 mm long and 0.3 mm wide in *M. pectinata*, in the position of genital pore, which is located slightly anterior to the middle of segment margin as contrasted with posterior to the middle of segment margin in *M. pectinata*, in the larger ovary, which is 1.12 to 1.25 mm wide as contrasted with 0.73 to 0.78 mm wide in *M. pectinata*, and in the uterus form in the senile segment, which takes the form of a transversal median stem with numerous diverticula (33 to 35) in the posterior and anterior directions as contrasted with the form of a transversal median stem with few diverticula (20 to 25) in *M. pectinata*. Furthermore, in the present species, the testes disappear in the senile segments, while in *M. pectinata*, they persist even in the senile segments which have become detached.

Host. *Lepus brachyurus*.

Habitat. Small intestine.

Locality and date. Beppu City, Ōita Prefecture; December 22, 1973.

Type depository. Biological Laboratory, Nara University of Education, Nara, Japan.

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